

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.-17. (Cancelled)

18. (Currently Amended) A method of treating a subterranean formation comprising:
providing a servicing fluid comprising reduced-density, coated particulates,
wherein the ~~method of making the reduced-density, coated particulates comprises~~ comprise a
particulate material; a coating material; and a density reducing material comprising polystyrene
divinylbenzene adhered to the coating material on an exterior surface of the particulate material;
and

~~coating a particulate material with a coating material to create a coated~~
~~particulate; and,~~
~~adhering a density-reducing material to the surface of the coated~~
~~particulate on the fly to create reduced-density, coated particulates; and,~~
pumping the servicing fluid into a the subterranean formation.

19. (Original) The method of claim 18 wherein the coating material comprises a resin composition.

20. (Withdrawn) The method of claim 19 wherein the resin composition comprises a hardenable resin component comprising a hardenable resin and a hardening agent component comprising a liquid hardening agent, a silane coupling agent, and a surfactant.

21. (Withdrawn) The method of claim 19 wherein the resin composition comprises a furan-based resin selected from the group consisting of a furfuryl alcohol, a mixture furfuryl alcohol with an aldehyde, a mixture of furan resin and phenolic resin and mixtures thereof.

22. (Withdrawn) The method of claim 21 further comprising a solvent selected from the group consisting of 2-butoxy ethanol, butyl acetate, furfuryl acetate, and mixtures thereof.

23. (Withdrawn) The method of claim 19 wherein the resin composition comprises a phenolic-based resin selected from the group consisting of a terpolymer of phenol, a phenolic formaldehyde resin, a mixture of phenolic and furan resin, and mixtures thereof.

24. (Withdrawn) The method of claim 23 wherein the resin composition further comprises a solvent selected from the group consisting of butyl acetate, butyl lactate, furfuryl acetate, 2-butoxy ethanol, and mixtures thereof.

25. (Previously Presented) The method of claim 19 wherein the resin composition comprises a HT epoxy-based resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolac resin, polyester resin, glycidyl ethers, and mixtures thereof.

26. (Previously Presented) The method of claim 25 wherein the resin composition further comprises a solvent selected from the group consisting of dimethyl sulfoxide, dimethyl formamide, dipropylene glycol methyl ether, dipropylene glycol dimethyl ether, dimethyl formamide, diethylene glycol methyl ether, ethylene glycol butyl ether, diethylene glycol butyl ether, propylene carbonate, d'limonene, fatty acid methyl esters, and mixtures thereof.

27. (Withdrawn) The method of claim 19 wherein the resin composition comprises a phenol/phenol formaldehyde/furfuryl alcohol resin comprising from about 5% to about 30% phenol, from about 40% to about 70% phenol formaldehyde, from about 10 to about 40% furfuryl alcohol, from about 0.1% to about 3% of a silane coupling agent, and from about 1% to about 15% of a surfactant.

28. (Original) The method of claim 1 wherein the coating material comprises a tackifying composition.

29. (Previously Presented) The method of claim 28 wherein the tackifying composition material is selected from the group consisting of a polyamide, a polyester, a polycarbonate, a polycarbamate, a natural resin, and a combination thereof.

30. (Withdrawn) The method of claim 18 wherein the density-reducing material comprises micro-material.

31. (Original) The method of claim 18 wherein the density-reducing material comprises low-density material similar in size to the particulate material.

32. (Original) The method of claim 18 wherein the particulate material is coated with the coating material on-the-fly.

33. (Previously Presented) The method of claim 18 further comprising:
providing a servicing fluid; and
suspending the reduced-density, coated particulates in the servicing fluid after adhering the density-reducing material to the surface of the coated particulate on-the-fly.

34. (Original) The method of claim 33 wherein the reduced-density, coated particulates are suspended in the servicing fluid on-the-fly.

35. (Currently Amended) A method of fracturing a subterranean formation comprising:

providing a fracturing fluid comprising reduced-density, coated particulates, wherein ~~the method of making the reduced-density, coated particulates comprises the steps of:~~ comprise a particulate material; a coating material; and a density reducing material comprising polystyrene divinylbenzene adhered to an exterior surface of the particulate material; and

~~coating a particulate material with a coating material to create a coated particulate; and,~~

~~adhering a density-reducing material to the surface of the coated particulate on-the-fly to create reduced-density, coated particulates; and,~~

placing the fracturing fluid into the subterranean formation at a pressure sufficient to create at least one fracture therein; and

~~removing the fracturing fluid and leaving at least a portion of the coated proppant in the fracture.~~

36. (Original) The method of claim 35 wherein the coating material comprises a resin composition.

37. (Withdrawn) The method of claim 36 wherein the resin composition comprises a hardenable resin component comprising a hardenable resin and a hardening agent component comprising a liquid hardening agent, a silane coupling agent, and a surfactant.

38. (Withdrawn) The method of claim 36 wherein the resin composition comprises a furan-based resin selected from the group consisting of a furfuryl alcohol, a mixture furfuryl alcohol with an aldehyde, a mixture of furan resin and phenolic resin and mixtures thereof.

39. (Withdrawn) The method of claim 38 further comprising a solvent selected from the group consisting of 2-butoxy ethanol, butyl acetate, furfuryl acetate, and mixtures thereof.

40. (Withdrawn) The method of claim 36 wherein the resin composition comprises a phenolic-based resin selected from the group consisting of a terpolymer of phenol, a phenolic formaldehyde resin, a mixture of phenolic and furan resin, and mixtures thereof.

41. (Withdrawn) The method of claim 40 wherein the resin composition further comprises a solvent selected from the group consisting of 2-butoxy ethanol, butyl acetate, furfuryl acetate, and mixtures thereof.

42. (Previously Presented) The method of claim 36 wherein the resin composition comprises a HT epoxy-based resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolac resin, polyester resin, glycidyl ethers, and mixtures thereof.

43. (Previously Presented) The method of claim 42 wherein the resin composition further comprises a solvent selected from the group consisting of dimethyl sulfoxide, dimethyl formamide, dipropylene glycol methyl ether, dipropylene glycol dimethyl ether, dimethyl formamide, diethylene glycol methyl ether, ethylene glycol butyl ether, diethylene glycol butyl ether, propylene carbonate, d'limonene, fatty acid methyl esters, and mixtures thereof.

44. (Withdrawn) The method of claim 36 wherein the resin composition comprises a phenol/phenol formaldehyde/furfuryl alcohol resin comprising from about 5% to about 30% phenol, from about 40% to about 70% phenol formaldehyde, from about 10 to about 40% furfuryl alcohol, from about 0.1% to about 3% of a silane coupling agent, and from about 1% to about 15% of a surfactant.

45. (Original) The method of claim 35 wherein the coating material comprises a tackifying composition.

46. (Previously Presented) The method of claim 45 wherein the tackifying composition material is selected from the group consisting of a polyamide, a polyester, a polycarbonate, a polycarbamate, a natural resin, and a combination thereof.

47. (Withdrawn) The method of claim 35 wherein the density-reducing material comprises micro-material.

48. (Original) The method of claim 35 wherein the density-reducing material comprises low-density material similar in size to the particulate material.

49. (Original) The method of claim 35 wherein the particulate material is coated with the coating material on-the-fly.

50. (Withdrawn) A method of installing a gravel pack comprising:
providing a gravel pack composition comprising a delivery fluid and reduced-density, coated particulates wherein the method of making the reduced-density, coated particulates comprises the steps of:

coating a particulate material with a coating material to create a coated particulate; and,

adhering a density-reducing material to the surface of the coated particulate on-the-fly to create reduced-density, coated particulates; and,

introducing the gravel pack composition to the well bore so that the reduced-density, coated gravel particulates form a gravel pack substantially adjacent to the wellbore.

51. (Withdrawn) The method of claim 50 wherein the coating material comprises a resin composition.

52. (Withdrawn) The method of claim 51 wherein the resin composition comprises a hardenable resin component comprising a hardenable resin and a hardening agent component comprising a liquid hardening agent, a silane coupling agent, and a surfactant.

53. (Withdrawn) The method of claim 51 wherein the resin composition comprises a furan-based resin selected from the group consisting of a furfuryl alcohol, a mixture furfuryl alcohol with an aldehyde, a mixture of furan resin and phenolic resin and mixtures thereof.

54. (Withdrawn) The method of claim 53 further comprising a solvent selected from the group consisting of 2-butoxy ethanol, butyl acetate, furfuryl acetate, and mixtures thereof.

55. (Withdrawn) The method of claim 51 wherein the resin composition comprises a phenolic-based resin selected from the group consisting of a terpolymer of phenol, a phenolic formaldehyde resin, a mixture of phenolic and furan resin, and mixtures thereof.

56. (Withdrawn) The method of claim 55 wherein the resin composition further comprises a solvent selected from the group consisting of butyl acetate, butyl lactate, furfuryl acetate, 2-butoxy ethanol, and mixtures thereof.

57. (Withdrawn) The method of claim 51 wherein the resin composition comprises a HT epoxy-based resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolac resin, polyester resin, glycidyl ethers, and mixtures thereof.

58. (Withdrawn) The method of claim 57 wherein the resin composition further comprises a solvent selected from the group consisting of dimethyl sulfoxide, dimethyl formamide, dipropylene glycol methyl ether, dipropylene glycol dimethyl ether, dimethyl formamide, diethylene glycol methyl ether, ethylene glycol butyl ether, diethylene glycol butyl ether, propylene carbonate, d'limonene, fatty acid methyl esters, and mixtures thereof.

59. (Withdrawn) The method of claim 51 wherein the resin composition comprises a phenol/phenol formaldehyde/furfuryl alcohol resin comprising from about 5% to about 30% phenol, from about 40% to about 70% phenol formaldehyde, from about 10 to about 40%

furfuryl alcohol, from about 0.1% to about 3% of a silane coupling agent, and from about 1% to about 15% of a surfactant.

60. (Withdrawn) The method of claim 50 wherein the coating material comprises a tackifying composition.

61. (Withdrawn) The method of claim 60 wherein the tackifying composition is selected from the group consisting of a polyamide, a polyester, a polycarbonate, a polycarbamate, a natural resin, and a combination thereof.

62. (Withdrawn) The method of claim 50 wherein the density-reducing material comprises micro-material.

63. (Withdrawn) The method of claim 50 wherein the density-reducing material comprises low-density material similar in size to the particulate material.

64. (Withdrawn) The method of claim 50 wherein the particulate material is coated with the coating material on-the-fly.

65. (Previously Presented) The method of claim 18 wherein the servicing fluid is a fracturing fluid.

66. (Previously Presented) The method of claim 18 wherein pumping the servicing fluid into a subterranean formation comprises placing the servicing fluid into the subterranean formation at a pressure sufficient to create at least one fracture therein.

67. (Withdrawn) The method of claim 18 wherein pumping the servicing fluid into a subterranean formation comprises introducing the servicing fluid into the well bore so that the reduced-density, coated particulates form a gravel pack substantially adjacent to the wellbore.

68. (New) A method of treating a subterranean formation comprising:
providing a coated particulate and a density reducing material;
adhering the density reducing material to a surface of the coated particulate on-the-fly to create reduced-density, coated particulates;

providing a servicing fluid;
placing the reduced-density, coated particulates in the servicing fluid; and
pumping the servicing fluid into the subterranean formation.

69. (New) The method of claim 68 wherein the servicing fluid is a fracturing fluid.

70. (New) The method of claim 68 wherein pumping the servicing fluid into a subterranean formation comprises placing the servicing fluid into the subterranean formation at a pressure sufficient to create at least one fracture therein.

71. (New) The method of claim 68 wherein the density reducing material comprises polystyrene divinylbenzene.

72. (New) The method of claim 68 wherein the coating material comprises a resin composition.

73. (New) The method of claim 68 wherein the resin composition comprises a HT epoxy-based resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolac resin, polyester resin, glycidyl ethers, and mixtures thereof.

74. (New) The method of claim 68 wherein the resin composition further comprises a solvent selected from the group consisting of dimethyl sulfoxide, dimethyl formamide, dipropylene glycol methyl ether, dipropylene glycol dimethyl ether, dimethyl formamide, diethylene glycol methyl ether, ethylene glycol butyl ether, diethylene glycol butyl ether, propylene carbonate, d'limonene, fatty acid methyl esters, and mixtures thereof.

75. (New) The method of claim 68 wherein the coating material comprises a tackifying composition.

76. (New) The method of claim 68 wherein the tackifying composition material is selected from the group consisting of a polyamide, a polyester, a polycarbonate, a polycarbamate, a natural resin, and a combination thereof.